

U.S. Patent Application Serial No. **09/939,716**  
Amendment filed December 9, 2008  
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**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claims 1-16 (canceled).

1           Claim 17 (previously presented):     An optical transmitter comprising;  
2           an input terminal for accepting an electrical binary signal,  
3           an electrical-optical conversion means for converting an electrical signal to an optical signal,  
4           an amplifier for amplifying an input signal applied to said input terminal to level requested  
5           for operating said electrical-optical conversion means, and applying the amplified electrical signal  
6           to said electrical-optical conversion means,  
7           said electrical-optical conversion means having a traveling wave type electrode operating to  
8           restrict bandwidth of an output light of said electrical-optical conversion means,  
9           wherein  
10          said electrical-optical conversion means is a Mach Zehnder light intensity modulator having  
11          a traveling wave type electrode,  
12          bandwidth of optical output of said Mach Zehnder light intensity modulator is restricted by  
13          using mismatching of phase velocity of electric wave propagating on said traveling wave type  
14          electrode and optical wave propagating in an optical waveguide having refractive index depending

15 upon electrical field generated by said electric wave,

16 a precoding means is provided at an input stage of said amplifier,

17 said precoding means provides an output which is the same as the previous output when an  
18 input binary digital signal is 0, and an output which differs from the previous output when an input  
19 digital signal is 1, and

20 said traveling wave type electrode is designed so that phase change of optical wave  
21 propagating in said optical waveguide depending upon said electrical field has waveforms of a  
22 ternary duobinary signal,

23 wherein modulation efficiency of said Mach Zehnder light intensity modulator at  $f_0/2$  is  
24 always larger than that at frequency higher than  $f_0/2$ , where  $f_0$  is clock frequency of said electrical  
25 binary signal.

Claims 18-23 (canceled).

1 Claim 24: (currently amended): An optical transmitter comprising:

2 an input terminal for accepting an electrical binary signal,

3 an electrical-optical conversion means for converting an electrical signal to an optical signal,

4 an amplifier for amplifying an input signal applied to said input terminal to level requested  
5 for operating said electrical-optical conversion means, and applying the amplified electrical signal  
6 to said electrical-optical conversion means,

7           said electrical-optical conversion means having a traveling wave type electrode operating to  
8 restrict bandwidth of an output light of said electrical-optical conversion means,

9           wherein

10          said electrical-optical conversion means is a Mach Zehnder light intensity modulator having  
11 a traveling wave type electrode,

12          bandwidth of optical output of said Mach Zehnder light intensity modulator is restricted  
13 because of loss of said traveling wave type ~~electrode~~ electrode,

14          a precoding means is provided at an input stage of said amplifier,

15          said precoding means provides an output which is the same as the previous output when an  
16 input binary digital signal is 0, and an output which differs from the previous output when an input  
17 digital signal is 1, and

18          said traveling wave type electrode is designed so that phase change of optical wave  
19 propagating in said optical waveguide depending upon said electrical field has waveforms of a  
20 ternary duobinary signal,

21          wherein modulation efficiency of said Mach Zehnder light intensity modulator at  $f_0/2$  is  
22 always larger than that at frequency higher than  $f_0/2$ , where  $f_0$  is clock frequency of said electrical  
23 binary signal.

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